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ABSTRACT

The changing profile of students enrolled in the school of agriculture at Auburn University raised several questions concerning the critical social factors and background characteristics associated with a student's decision to major in agriculture and the relation of this educational choice to eventual career goals. After classifying agriculture majors into three groups (production agriculture, agribusiness, and non-agriculture), a three-wave mail questionnaire was sent in early 1977 to a representative sample (N-569) of Auburn's agriculture students. Special attention was given to such structural factors as rural residential background, father's occupation, and socializing experiences such as farmwork and participation in agriculture-related organizations. The foremost conclusion drawn from the data was that the decision to pursue a college major in agriculture was influenced by the same factors found to influence choice of college curriculum in previous studies. Since the effect of neither structural nor socializing influences individually or together adequately explained educational and occupational choices, greater theoretical emphasis needs to be placed on the variety of influences that come to bear when making such decisions. (NJ/ER)

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SOCIAL STRUCTURE, SOCIALIZATION AND EDUCATIONAL AND OCCUPATIONAL CHOICES OF AGRICULTURE STUDENTS

Carol Deming Payne

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SOCIAL STRUCTURE, SOCIALIZATION AND EDUCATIONAL AND OCCUPATIONAL CHOICES OF AGRICULTURE STUDENTS

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SOCIAL STRUCTURE, SOCIALIZATION AND EDUCATIONAL AND OCCUPATIONAL CHOICES OF AGRICULTURE STUDENTS

Carol Dening Payne

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VITA

Carol Deming Payne, daughter of Melvin E. and Carol Randle Deming, was born January 27, 1948, in Birmingham, Alabama. She attended Sheffield and Florence City Schools and graduated from Coffee High School, Florence, Alabama, in 1966. In August, 1970 she received the degree of Bachelor of Science in Education from Athens College. She entered the Graduate School, Auburn University in June, 1976. She married Donald Ray Payne in May, 1969. They have two children, Christopher Randle and Jason Melin.

THESIS ABSTRACT

SOCIAL STRUCTURE, SOCIALIZATION AND EDUCATIONAL AND OCCUPATIONAL CHOICES OF AGRICULTURE STUDENTS

Carol Deming Payne

Master of Science, March 16, 1978
(B.S.Ed., Athens College, 1970)

85 Typed Pages

Directed by John E. Dunkelberger

The changing profile of students enrolled in schools of agriculture during the 1970's has drawn attention to factors influencing the decision by youth to pursue a major and an eventual career in agriculture.

The objectives of this study were to identify from the literature indicators of educational and occupational choice and to evaluate the applicability of these factors to choice of an agricultural education and occupation by college students. Procedurally, the various curricula offered in one School of Agriculture and the occupations chosen by a sample of 569 agriculture students in attendance were classified as being of a primarily production agriculture, agribusiness or non-agriculture type. A series of fifteen theoretically

v

derived hypotheses were developed to test for differences among students making these types of career choices on selected structural and socializing factors.

Two kinds of factors were analyzed. Structural factors included sex, residential background and father's occupational status. Socializing factors were those agriculture related experiences during high school, work and college. Chi square analysis revealed that each variable except sex was statistically associated with the differential choice of a college major. However, only sex and father's occupational status were significant in differentiating occupational choices.

Discriminant analysis was used to determine the combined effects of structural and socializing influences. The results further supported the prior findings. Additionally, discriminant analysis verified the classification of each student into the production agriculture, agribusiness and non-agriculture types on the basis of the six influencing factors. Two thirds of the educational choices and nearly 60 percent of the occupational choices were correctly classified into one of the three types. based on the consistency of the structural and socializing variables.

It was concluded that the typology of educational choice developed was a meaningful summation device for classifying college agriculture students.

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I. INTRODUCTION

Farm employment in the United States has declined precipitously in the past sixty years. At the same time the productivity of the American farmer has increased phenomenally through the use of a variety of technological advancements ranging from the invention of the gasoline engine replacing horses and mules as power to improved crop varieties producing greater yields.

The establishment of the Land Grant College System in the 1860's formed the basis for many of these changes. Personnel in these Land Grant Colleges were responsible for many of the technological advancements being made such as the cotton picker, the self propelled combine and hybrid corn.

As a part of the Land Grant system, the Agricultural and Mechanical College of Alabama at Auburn was officially opened in the fall of 1872. The task of developing a course of study to convey advancing agricultural technology to a young generation of farmers was a challenging one for early educators at the institution. Book Farming was characterized in the first catalogue as:

> 'Not to teach how to plow but the reason for plowing at all, to teach the composition and nature of soils and the philosophy of plowing...' (McGraw; 1976:22)

1

These were the guidelines set in print for the first courses taught in agriculture at Auburn. Soil culture, animal husbandry, stock breeding, feeding, veterinary science, agricultural chemistry, rural engineering and land drainage were included among the new agricultural classes offered (McCraw;1976:22).

Along with the teaching of agriculture in the Land Grant Colleges other agricultural advancements were being made. Organized efforts including farmers' committees, home economics and 4-H clubs were used to introduce new technology and innovative changes. Vocational agriculture was accepted as a functional subject. The older system of farming methods was gradually being replaced by new technology.

During this transitional period almost all types of agricultural technology coexisted with practices dating from more primitive times. Efforts were being made by farmers to understand and follow the advice of agricultural experts such as the county agent, vocational agriculture teacher, agriculture bulletins, and a variety of printed information sources.

Today although technological advancements have been made and problems of producing enough food for home consumption have been solved, new challenges in agriculture have arisen. These range from ecological problems to the more economic ones of producing and distributing farm output. Changes implemented to meet these challenges are evidenced throughout the School of Agriculture. Expanded curricula offering

degree programs in a variety of academic disciplines and highly technical areas have been added. These curricula range from traditional studies such as agronomy and soils, animal and dairy science, forestry and agricultural engineering to studies in innovative specialities such as landscape design, ornamental horticulture, wood technology and agribusiness. With the increasing variety found in degree program offerings there has been a corresponding increase in employment opportunities available to those holding degrees in all areas of agriculture.

These expanded and diverse curricula have attracted an increasing number of students to educational programs leading to careers in agriculture. According to figures provided by the National Association of State Universities and Land Grant Colleges, there has been an enrollment increase of 160 percent nationally between 1963 and 1975 in agricultural studies. Of special interest is the increase in the number of women pursuing careers in agriculture at land grant institutions.

At Auburn University steady increases in enrollment in agriculture have occurred annually since 1970 with the increases being higher for males than females except for 1976 when there was a 12 percent greater increase for females than males, Table 1. The percentage of females enrolled has

TABLE 1

STUDENT ENROLLMENT* AND PERCENTAGE INCREASE FOR THE SCHOOL OF AGRICULTURE, AUBURN UNIVERSITY FROM 1970-1976 BY SEX

Year	Males		Females		Total	
	Number	% Increase	Number	% Increase	Number	% Increase
1970	649	---	64	---	713	---
1971	667	2.7	74	1.6	741	3.9
1972	717	7.4	103	3.9	820	10.7
1973	790	10.2	155	5.0	945	15.2
1974	887	12.2	159	2.5	1046	10.7
1975	1058	19.3	229	4.4	1287	23.0
1976	1136	6.9	281	18.5	1417	26.1

* Enrollment figures presented here are those reported in the Auburn University Bulletins, 1970-1976.

increased from slightly over 8 percent in 1970 to nearly 20 percent in 1976.

Statement of the Problem

The changing profile of students enrolled in the School of Agriculture at Auburn University has raised several questions concerning the critical social factors and background characteristics associated with a student's decision to major in agriculture and the relation of this educational choice to their eventual career goals. Attention is given to the contention that farming continues to be a hereditary occupation to an extent virtually unknown for other occupations in American society (Strauss; 1964:422). This suggests the importance of structural factors such as rural residential background and father's occupation to the choice of a major and future career in agriculture; as well as certain socializing experiences like farm work and participation in agriculture related organizations.

The general objective of this research is to provide an explanation of college educational choice and eventual occupational choice as they relate to students enrolled in agricultural curricula. Special attention is given to both structural and socializing background characteristics of students enrolled in the School of Agriculture and to their career goals.

Purpose

The specific purpose of this research is threefold:

1. to identify from previous research indicators of educational and occupational choice among students enrolled in agriculture.

2. to evaluate how well these indicators measure career related choices, both educational and occupational, of Agriculture students.

3. to evaluate the relative ability of selected personal characteristics to discriminate educational and occupational choices of students in Agriculture.

It is anticipated that this research will provide assistance to administrators and instructors responsible for planning effective college curricula. Also, it should give administrative personnel and college faculty as well as high school counselors a greater awareness of the career needs and aspirations of Agriculture students. With this information a better understanding should be gained of the factors that have attracted students to pursue an agricultural education and a professional career in agriculture.

As the profile of students in agriculture has changed over the years, it is believed that their occupational goals have changed also. With the realization that individual counseling in large institutions may be difficult to provide or obtain, it is hoped that a greater awareness by college administrators and faculty of student orientations to agri-

culture will aid in counseling prospective students and will help them to attain their desired educational and occupational goals. Moreover, both high school counselors and students interested in agriculture may find this information helpful. A major goal of this study is an increased understanding of the agriculture program and career selection process in order to increase the effectiveness of those advising students making such choices.

II. THEORETICAL FRAMEWORK AND RELATED RESEARCH

A cultural doctrin exists in American society which is distinctive in two respects. First, striving for success on the part of the individual is a socially defined expectation and second, this expectation is appropriate for everyone (Merton: 1957: 167). From this highly generalized achievement orientation evolves an equally generalized goal of success in the occupational system (Parsons; 1951: 237).

Economists, psychologists and vocational counselors have developed specific theories of occupational choice but have directed little attention to the social factors that determine the actual choices. Economists have stressed the effect of earnings on job choice, while psychologists as well as sociologists have placed emphasis on the individual's personality and needs. Vocational counselors have directed their interests toward the more practical concerns of occupational adjustment and job satisfaction. This study focuses on sociological variables in the occupational selection process.

Research Literature

Sociological research efforts in the area of occupational choice have been directed towards the identification of a

variety of social characteristics involved in occupational choice. Although many social characteristics are external to the individual and subject to little personal control, they do exert constraining forces upon the occupational and educational alternatives available and eventually on the choices made by individuals. Not all people end up in the occupations to which they aspire. Many are unable to meet the standards for entry into their desired occupation and are required to make decisions which lead to alternative career tracts. These socially induced changes in the occupational decision process constitute the core of the compromise process (Blau;1956;565).

From study to study the same group of characteristics have been identified as critical to individuals' choices of occupations. To a lesser extent these social characteristics are viewed as influential in the area of educational choice. Social characteristics most consistently investigated and reported in the research literature are sex, residence and social class background. These may be subsumed under the concept of structural factors because they are external to the individual in the sense of being ascribed characteristics beyond immediate control.

In an early study of Wisconsin high school seniors, Sewell, Haller and Strauss (1957:71) examined the effects of social status on educational and occupational aspirations. They found that the proportion of youth choosing a high

status occupation increased directly with the level of the father's occupational status. Other research such as that by Rehberg and Westby (1967:372) and Sewell and Shah (1968:570) have demonstrated this same positive relationship between socioeconomic status and occupational attainment.

In examining the relationship between the educational and occupational attainment processes, Sewell, Haller and Portes (1969:90) developed a model showing the relative importance of education as a prerequisite for occupational attainment. The model suggests that socioeconomic status and mental ability affect both academic performance and the influence significant others have on a student. Also the influence of significant others affects a youth's levels of educational and occupational aspirations. And finally, the levels of aspiration affect subsequent levels of attainment.

Research support is found also for the contention that urban youth have a greater opportunity to become acquainted with a broader range of occupational possibilities than do rural youth reared in small towns and in the country (Haystead; 1971:75). Studies reporting empirical support for this contention include Sewell (1964:36) and Sewell and Orenstien (1965:561).

The third factor critical to career choice is the sex of the individual. Most researchers have assumed rather than tested for sex differences in educational and occupational choice. Only recently has it become fashionable to consider

the choice process among women and to compare across sex. In one such study Turner (1964:278) concludes that women's educational and occupational ambitions are closely coordinated, and their occupational ambitions greatly affected by their adolescent sex role training. Support for this is evidenced by the fact that women's occupational choices are concentrated into three occupational categories: the semi-professions, professions and clerical work (Sauter;1959:35). This sexual stratification of their occupational goals in the labor market (Gross;1968:199) is becoming more pronounced with men entering female occupations and men evacuating occupations women have moved into, creating more stratification.

An additional proposition regarding occupational choice and the sex of the individual is expressed by Psathas (1958:256) in his contention that sex is closely related to the family's socioeconomic status. The greater a family's economic resources the more likely it is to be able to afford an education for children of either sex. But limited resources families are more likely to consciously set aside or divert income to support the occupational attainments of their male children than their female children.

In addition to the relationship between family socioeconomic status, sex differences are also evidenced in the socialization experiences (Schwarzweller; 1960:131). Schwarzweller contends that differential socialization is reflected in the pattern of value orientations between the

sexes. David (1974:11) concludes that values determine the occupation one chooses and these values are sex linked to the extent that men, more than women, want to be original and creative and desire leadership roles. Whereas, women, more than men, stress the importance of being helpful to others and of wanting to work with people.

Blau (1956:530) expands on the function of these structural concerns by stating that in addition to determining the occupational level to which an individual aspires, they also influence the personality development of the chooser. Kadushin (1969:39) elaborates on this point by stating that the structure of a profession and the social arrangements of a professional training program may be responsible for the creation of a professional self-concept. Further support is drawn from the finding of Simpson and Simpson (1960:125) who suggest that some students undergo anticipatory socialization into their groups of future colleagues.

Finally, structural concerns define the socioeconomic conditions within which the selection of an occupation takes place. Miller and Form (1964:187) found that socialization into a given class determines the future occupational level to which an individual aspires.

Another set of research concerns has been the choice of a college major. This has been viewed as a critical stage in the occupational choice process. The college major is a specialized preparation for the anticipated occupation. As

such, knowledge concerning the key reasons for the choice of a college major have been sought.

Holland and Nichols (1964:235) found that students choose college majors and occupational fields with which they can most readily identify. One aspect of this identification is their perception of sharing certain attributes and characteristics with typical students in that field. Similarly, Powell (1973:284) found that the tendency toward homogeneity among students in different majors tends to further attract persons with similar social characteristics. Critical factors in this process are occupational opportunities, labor market conditions and the educational system.

Few studies have given special attention to careers in agriculture. However, one of particular relevance is that by Strauss (1956:263) who found that the choice of farming as a career was related to family ownership, family income and owner operated farms. He concluded that there is a tendency for the occupational selection process among farmers' sons to be functionally related to the needs of modern agriculture and to the interests, resources and abilities of farm youth. In a more recent study Strauss (1964:423) explored the correspondence between social and psychological characteristics of high school age farm boys, their occupational choices and the needs of society for optimum allocation of talent to various occupations. The findings revealed that the social and psy-

chological characterictics of farm boys match the characteristics of the occupations they desire to enter (Strauss;1964:425).

Theoretical Framework

Among sociologists specifically, there exists a lack of agreement on terminology and conceptual meaning when addressing the occupational choice process. Some writers have equated occupational choice with aspiration by defining it to mean only the psychological preferences one has for a particular occupation (Kuvlesky and Bealer; 1966:265). Others contend that aspirations as well as expectations are related but distinct dimensions of occupational choice.

In a reformulation of his theory, Ginzberg (1972:171) refers to the concept of occupational choice as a long term process of occupational goal selection resulting in the eventual attainment of an occupational status. Ginzberg also postulates that the process is largely irreversible and that there is a narrowing of alternatives with each successive occupational decision. He suggests that in actuality an individual's interests, capacities and values may be in conflict. When this is true, he sees the individual as compromising among a variety of occupational interests in selecting a career.

Blau's (1956:563) conception of occupational choice is similar in a number of respects to that of Ginzberg. The choice process is viewed as one of compromise between occupa-

tional preferences weighed against expectations for attaining entry. In Blau's framework occupations are investigated in terms of the psychological characteristics of the individual involved and the economic and social structures within which that individual is making his or her occupational decisions.

Along these same lines, Ford and Box (1967:288) view occupational choice as a process in which an individual establishes a compromise between trying to realize his occupational goals and coping with his perception of the chances of realizing these goals.

Even though there are a number of theoretical perspectives involving occupational choice, agreement exists among these on the point that occupational choice is a process rather that an isolated or arbitrary event. Also there exists some agreement that within this process there are a variety of structural and social psychological factors that come to bear on the decisions individuals make concerning their educational and occupational goals.

From the theoretical and research literature have emerged three fairly distinct characterizations of occupational choice. One of these (Sherlock and Cohen; 1966:303) emphasizes the deliberate, planned and purposive nature of occupational choice. It concludes that although career choice is a function of reward and access, these variables in turn are influenced by the occupational history of the individual's family.

A second characterization (Katz and Martin; 1962:149) maintains that occupational choice is spontaneous, non-rational and adventitious. Individuals are seen as drifting into occupations by virtue of situational influences and social pressures. Career choices are conceived as courses of action which represent only composite adaptations made to meet the exigencies of an individual's particular situation.

A third approach to occupational choice taken by still other sociologists (Pavalko;1971:72) directs considerable attention to the social origins of persons in particular occupations, rather than focusing on the occupational decisions of the individual. This line of investigation deals with the way in which occupations selectively recruit persons possessing specific personal or social characteristics (Pavalko;1971:72). Recruitment is to some extent dependent upon a number of considerations, independent of the particular individual, that influence the availability of particular types of occupations within the social system (Anderson;1963:619).

Both the occupational and educational choice processes are viewed as parallel and complimentary (Pavalko;1971:61). Thus, to discuss occupational choice without considering educational decisions implies an artificial view of reality. Specialized formal education or training is required for entry into many occupations ranging from those in the health fields to those in agriculture or to skilled and semi-skilled

jobs in industry. Many occupations require training beyond high school either in the form of formal educational settings or in apprenticeship programs or employment experience.

Theories of selective recruitment as they occur in the educational and occupational choice process identify a similar set of interrelated social factors as being relevant to both types of decisions. Astin and Panos (1969:216) and Miller and Form (1964:184) contend that these social factors may be used in predicting the choice of either an occupation or a college major. Among the most pertinent factors are high school academic attainment (grades), father's educational level, amount of education sought, initial career choice and the sex of the student.

Relationships between historical circumstances such as the individual's sex, race, father's occupation, education and income, availability of financial aid and contacts with influential persons as well as social and economic conditions form the basis for a causal theory of occupational choice. The theory elaborated by Miller and Form considers the key problem to revolve around the relative influence of the various aspects of social structure on the ultimate choice of an individual's career.

In their theory of occupational choice, Miller and Form (1964:888) identify a series of structural conditions they view as most relevant in predicting the choice of a college major. Although a majority of the students entering college

change their initial career decisions during the ensuing four years, Astin and Panos (1969:218) hold that there are several factors which can be used in the prediction of an individual's career choice. These factors are the same set of factors identified by Miller and Form (1964:188) but also include academic attainment, amount of education desired and the initial career choice. They indicate that these factors provide the best explanation of the career choices made by students.

The structuralist perspective presented in these theories is quite different from theories that place emphasis of the social values one attaches to a particular occupation. Values in occupational choice, of course, must be inferred from behavior and measured by an individual's reaction to certain generalized conceptions about the occupation he expects to pursue (Schwarzweller;1968:127). Blaikie (1971:313) emphasizes the importance of values in an action approach to occupational choice. He maintains that values are the criteria which people use as standards for judgement when making choices. Emphasis is placed on the origin of the values, changes in the values and the relationship between these values and changes in occupational choice. Furthermore, Blaikie stresses the socialization received within the college scene as critical to the eventual choice of an occupation.

The research literature focusing upon preferences for and the values one has regarding educational and occupational choices is only a part of the total attainment process in which one identifies, prepares for and reaches a career goal. Another aspect related closely to the system of values in which one operates is the concept of commitment (Becker; 1960:33). Commitment involves independent observations of prior actions related to a consistent line of activity, a recognition by the individual of the original interest in a present activity and then evolving future decisions based on this prior behavior. Taken alone, these acts are not necessarily significant, but together they constitute commitment to a career goal.

Theoretical Synthesis

Current literature in the area of educational choice indicates that individuals choose a college major that will maximize the probability of their obtaining employment in their choosen occupational field. Furthermore, comparison of theoretical perspectives in the areas of educational and occupational choices reveals that the same set of factors are identified as influencing the goal choices of each.

In this study the educational and occupational choices are those specifically related to college majors found within the School of Agriculture and occupations chosen by students enrolled in these majors. The proposition is advanced that

agreement exists between the choice of a college major and the desire to enter a related occupational field.

Expansion of the degree offerings in the School of Agriculture has extended beyond the more basic areas of production agriculture into agribusiness and other areas associated with production and distribution of agricultural products. Still other degree programs lack any direct tie to agriculture.

On this basis a criteria for classification will be used which assumes that although a curricula is found within the School of Agriculture, its content and thrust may vary considerably in its relation to agriculture. Some majors within the School of Agriculture are designed specifically for providing training in production agriculture while others are oriented towards agribusiness and work in agriculture related industry. Still others represent basic science and nonagrigultural orientations with no direct agriculture identification. Therefore, for the purpose of this analysis educational and occupational choices will be classified as production agriculture, agribusiness and non-agriculture. On this basis, the first general hypothesis may be stated as follows:

> I. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with the choice of an occupation in these same areas.

The factors or variables influential in goal choice are of two types - structural and socializing. Structural variables such as sex, residential background and family socioeconomic status have been found to be critical to the choice of both a college major and an eventual occupation. A variety of positive prior experiences of a socializing nature have also been found to play an important role in the choices one makes concerning his or her education and eventual occupation and also serve as a measure of one's commitment to the choices made. However, a question arises concerning the relevance of these variables when the choices being made are limited to a unique field such as agriculture.

The importance of each of these two variables is strengthend by the unique aspect of agriculture as a college major and as an occupational field. Sex is critical to the choice for a number of reasons. Allocation of a family's economic resources as well as differential socialization that occurs on the basis of sex influence the choices made (Alexander and Eckland;1974:680). Also traditional sex stratification in the field of agriculture lends support to the proposition that females will be least prominent in production agriculture majors and occupations and most numerous in non-agricultural pursuits with the reverse being true for males. Therefore the following hypotheses may be stated:

II. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with the sex of the individual.

III. The choice of an occupation in production agriculture, agribusiness and non-agriculture occupations is associated with the sex of the individual.

A rural residential background in addition to limiting opportunities to become acquainted with a variety of occupations also provides experiences in agriculture which in turn serve as a commitment to a college major and eventual career in agriculture. The proposition is that the more rural the residence, the greater the likelihood of choosing a production agriculture tract. On this basis, the following two hypotheses are stated:

IV. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with one's residential background.

V. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with one's residential background.

Finally, more than other occupations in American society, agriculture continues to be hereditary. However, a problem exists in a pattern of intergenerational mobility among farmer's sons as a direct result of the decrease in farm jobs forcing many into blue collar occupations (Piker;1968:32). Nevertheless, some traditionalists continue

to maintain that the father should have an agriculture background for his son to enter and succeed in many agricultural pursuits. It is on this basis that the following two hypotheses are stated.

VI. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with the father's occupational status.

VII. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with the father's occupational status.

The opportunity for experiences in agriculture is not only available on the farm but can be supplemented through farm employment and reinforced by specialized agriculture related experiences in high school and college, as well as through farm employment. The decision to avail oneself of agriculture related experiences in each of these areas serves as an indication of the commitment a student brings to the college major and to an eventual career in agriculture. The proposition is made that the more one has participated in agriculture oriented activities, the greater the probability one will choose a major and career in production agriculture. It is on this basis that the following hypotheses are stated:

VIII. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with agriculture related high school experiences.

IX. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with agriculture related high school experiences.

During work experiences the structure of an occupation helps to create the self-concept of a particular occupational field (Haystead;1971:83). Hence, it is proposed that the greater the number of work experiences in agriculture one has, the greater the likelihood one will choose a production agriculture educational and occcupational tract. On this basis the following hypotheses are set forth for testing.

I. The choice of a college major in production Agriculture, agribusiness and non-agriculture is associated with agriculture related work experiences.

XI. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with agriculture related work experiences.

Finally, it is proposed that the more experiences directly related to agriculture one has during college increases the probability of the individual choosing a major and career in the production agriculture field (Hind and Wirth;1969:58). It is through these agriculture related experiences that students interact with other students with similar values and characteristics. Therefore, the following hypotheses are stated:

XII. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with agriculture related college experiences.

XIII. The choice of an occupation in production agriculture, agribusiness and non agriculture is associated with agriculture related college experiences.

Through the testing of the previous hypotheses, it is believed that the relevance of each of the aforementioned variables will be examined. The final two hypotheses generated for testing in this study examine the combined effects of sex, residential background, father's socioeconomic status, high school, work and college experiences on the choice of a college major and an occupation in the field of agriculture. The proposition relevant here is that the actual choice of an educational tract and career is a multifaceted process in which a number of structural and socializing factors contribe. No one factor can account for the individual choices made, although all play some part. When taken together, they provide a predictive scenario of students choosing different majors within the School of Agriculture. The relevant hypotheses to test this contention are as follows:

XIV. Sex, residential background, father's socioeconomic status, high school, work and college experiences discriminate in the choice of a college major.

XV. Sex, residential background, father's socioeconomic status, high school, work and college experiences discriminate in the choice of a occupation.

III. METHODOLOGY

Sample Design

This study is a part of a larger regional research effort which includes students currently enrolled in schools of agriculture and home economics at land grant institutions in the southern region. Known as Southern Regional Project S-114, the research is supported by the Cooperative State Research Service, United States Department of Agriculture and the agriculture experiment stations of participating institutions in the Southern Region. The study was completed during the Spring of 1977. For purposes of this study only data provided by students enrolled in the School of Agriculture at Auburn Univeristy are used.

From a population consisting of 1,387 students enrolled Winter Quarter 1977, a random sample was selected at a regionally determined rate of 16.26 percent. It was necessary to use Winter Quarter enrollment records because of the short nine week period associated with the quarter system. Use of a listing from Winter quarter presented several unique problems. A number of students had resigned during the quarter or graduated at the end of Winter Quarter and still others transferred out of the School of Agriculture at

quarter's end. An effort was made to identify resigned and graduated students prior selecting the sample, but no mechanism was found to identify the transfers. To test the reliability of the sample, a simple random sample of 40 nonrespondents were contacted by interviewers who found that resignation and transfer or anticipated transfer were the most common reasons for nonresponse.

In order to assure sufficient response for analysis of the local situation, independent of the regional sample, an additional 20 percent sample was drawn randomly from the remaining population. To this was added all remaining females except those enrolled in the general biology curricula. Female biology majors were not completely enumerated because they were more numerous in this major than in any other within the School. The resulting sample consisted of 569 students from whom 360 completed questionnaires were obtained, Table 2.

Questionnaire

A mail questionnaire approach was employed to obtain data from a representative sample of agriculture students. This decision was based on the type of information desired, nature of the population involved, and the estimated costs of obtaining such information by other means. The mail questionnaire has been shown by previous studies to be an effective means for obtaining the kinds of survey information

TABLE 2

ENROLLMENT, SAMPLE AND RESPONDENTS BY CURRICULUM
IN THE SCHOOL OF AGRICULTURE
AUBURN UNIVERSITY

Curriculum	Enrolled No.	%	Sample No.	%	Respondents No.	%
Agricultural Science	58	.04	19	33	13	68
Agricultural Economics	99	.07	33	33	29	88
Agricultural Engineering	43	.03	14	33	10	71
Agronomy & Soils	69	.04	23	33	19	83
Animal & Dairy Science	181	.13	90	50	49	54
Botany	22	.01	7	32	2	29
Microbiology	60	.04	20	30	15	75
Food Science	9	.006	5	56	5	100
Forestry	335	.24	138	41	86	62
Wood Technology	24	.01	3	13	0	0
Horticulture	31	.02	14	45	2	14
Ornamental Horticulture	141	.10	83	59	50	60
Poultry Science	12	.008	8	50	4	67
Zoology	92	.06	37	40	14	88
Wildlife	85	.06	33	39	21	64
Fisheries Management	42	.03	13	30	12	92
Marine Biology	64	.04	26	41	16	62
Entomology	13	.009	5	38	3	60
Totals	1,387*		569	41	850**	62

*11 of these students had resigned or graduated by Spring Quarter.

**6 students reported majors outside the School of Agriculture when contacted during Spring Quarter.

desired (Harris;1971:43; Hensley;1974:281). Economy and flexibility of sampling are two of the more obvious advantages of this procedure (Dunning and Cahalan;1973:181).

Questionnaires were developed jointly by researchers from all cooperating states. Conceptual areas covered included those of social origins, high school, College and work experience, life goals and attitudes. The length of the questionnaire and the amount of information obtainable was limited by the decision to use a mail questionnaire. The questionnaire was printed in booklet form. For the most part highly structured, precoded items were used. Open end questions were employed in a few instances where this appeared necessary in order to obtain the desired information.

Data Collection

Data collection proceeded in three phases. A first wave mailing was sent in time to be received by students upon their return for classes at the beginning of spring quarter. This mailing included a questionnaire, instructions, preaddressed and stamped envelope and a letter of introduction from the chairman of the Technical Committee who served as Regional Project Director. Three weeks later a follow up mailing including a replacement questionnaire, return envelope and second letter from the regional project director was sent to all who had not responded to the first mailing. Two weeks later a post card reminder and a week after that a

personally signed letter from the Dean were sent to all nonrespondents stressing the importance of the study and urging them to return their completed questionnaires. If they had lost or misplaced their questionnaires, replacement copies were made available in the Dean's Office.

Response rates were monitored on a daily basis. At the close of Spring Quarter, a 62 percent cumulative response rate was achieved. The first wave mailing resulted in the return of 195 questionnaires with a response rate of 34.2 percent.

Dependent Variables

The questionnaire focused on the conceptual areas of social origins, high school, college and work experiences, life goals and attitudes. Each of these areas represents a variety of influences bearing on individual decisions concerning educational and occupational choices.

Agriculture majors were classified into three groups - production agriculture, agribusiness and non-agriculture. Placement of the various majors in each category was made by the researcher in cooperation with the office of the Dean of the School of Agriculture. This classification was based on the recognition that although a student has chosen a college major offered in the School of Agriculture, this does not necessarily mean that he or she expects to pursue an occupation in the field of agriculture. Therefore, the same

classificatory scheme of production agriculture, agribusiness and non-agriculture was used for classifying the choice of an occupation. Again, personnel in the Dean's office assisted with decisions concerning assignment of specific occupations to the three categories.

To determine the respondent's choice of a college major, each respondent was asked to list their present major(s) or area of academic concentration(s). The choices were then classified into the three categories of production agriculture, agribusiness and non-agriculture. Of the students in this sample, approximately 22 percent were enrolled in production agriculture curricula, and 13 percent in agribusiness curricula, Table 3. The majority of students (63.9 percent) were enrolled in nonagricultural curricula.

Occupational aspiration refers to the choice of a particular occupational goal that one wishes or desires as his or her life work. Expectations differ from aspirations in that they refer to the occupation one really anticipates entering regardless of the personal desirability of the goal (Kuvlesky and Bealer; 1966:266). In this analysis occupational expectations are used as a measure of occupational choice rather than aspirations because of the more realistic dimension theoretically associated with expectations.

A two question sequence was employed to determine occupational expectations. The item used to determine occupational expectation immediately followed one on aspiration and

TABLE 3

PERCENTAGE ENROLLED IN MAJORS IN THE SCHOOL OF AGRICULTURE AS CLASSIFIED INTO CATEGORIES OF PRODUCTION AGRICULTURE, AGRIBUSINESS AND NONAGRICULTURE

Production Agriculture		Agribusiness		Nonagriculture	
Majors	%	Majors	%	Majors	%
General Agriculture	3	Agricultural Economics	7	Entomology	.08
Agricultural Engineering	2	Agricultural Journalism	.02	Forestry	24
Soil Science	.02	Agribusiness	.08	Horticulture	14
Animal and Dairy Science	9	Veterinary Science	4	Botany	.05
Poultry Science	.01	Vocational Agriculture	.02	Microbiology	.03
Agronomy	5			Marine Biology	.04
				Zoology	.03
				Food Science	.01
				Wildlife Biology	5
				Fisheries	3
				Biology	1
Total	22	Total	13.2	Total	63.9

involved a transitional statement. The question was: "Sometimes we are not always able to do what we want most. What kind of job do you really expect to have most of your life? Please give exact job." Unstructured responses produced by this question were coded according to a listing of agricultural occupations (Hoover: 1969). To this listing were added all additional agricultural occupations not included in the original list. Each occupation was then assigned a code without regard to status. This code did not imply a high or low status but merely served to identify the various occupations.

Independent Variables

Variables of two types are considered in this study to determine influences on the choice of a college major and the ultimate choice of an occupation. These types of influences are those of either a structural or socializing nature. Six variables, three for each dimension were chosen for investigation. Each of these independent variables were measured as a precoded, self reported responses to a questionnaire item.

Structural Variables

The three structural variables include sex, residence and father's occupational status. Determination of sex was made by having each respondent check the appropriate designation as male or female.

Residential background was determined by using the question "Please indicate the kind of place you have lived in most of your life (or for the longest period in your life):" Response categories ranging from most urban to most rural included (1) a large metropolitan city (over 500,000 in population), (2) a medium sized city (50,000 to 500,000 in population), (3) a smaller city (10,000 to 50,000 in population), (4) a town or village, (5) in the country, outside a city or village, or (6) in the country, on a farm or ranch, outside a city or village. A range of scores from 6 (farm or ranch) to 1 (large metropolitan city) was assigned to the six types of places. These six categories were collapsed into three: urban - a large metropolitan, medium sized or small city, rural non-farm - a town, village or in the country, outside a city or village, or on a farm.

Father's occupational status, used as an indicator of family social and economic status, was obtained by asking each respondent: "What is your father's current occupation? Be specific and detailed. If disabled, retired or deceased please indicate what his occupation was most of his life. If farmer or rancher, indicate his major agricultural product, how many acres he owns, and how many acres he operates." Using the Census Classification of Occupational Status, the occupations reported were assigned scores ranging from 1 to 99. Scores of 80 to 99 were categorized as high status, 50 to 79 as intermediate and 1 to 49 as low status. The high

status category included professional, technical, managerial and administrative occupations; intermediate status included sales, clerical and craftsmen occupations; and low status included operative, nonfarm and laborer occupations.

Socialization Variables

Socialization of work attitudes through consistent lines of activity is believed to be critical to the choice of an occupation. In this study measures of socialization involved three types of experiences - high school, college and employment. High school socialization experiences involving agriculture were determined by asking the question, "While enrolled in high school, did you participate in any of the following activities?" The agriculture related activites used included 4-H, FFA, and other vocational clubs such as Future Teachers and DECA. Three responses were solicited: (1) did not participate , (2) participated and (3) participated as a leader or officer. Scores for these agriculture related activites were summed to determine the extent of participation. Participation as well as leadership responses were each given a score of 1 each.

Employment experiences were determined by asking respondents to "Please indicate the kinds of work experiences you have had by giving a response for each work experience." The types of experiences listed were (1) farm or ranch work on home farm, (2) farm or ranch work elsewhere as a hired employee, (3) other agriculture related work and (4) other

work experiences. A simple yes or no response pattern was indicated for determining if the respondent had had any of the four types of work experiences. Yes responses were assigned a score of 1 and summed across all types except other work experiences to determine the number of different work experiences.

Participation in college agricultural related activities was ascertained by asking "Please indicate to which of the following agricultural organizations you belong and if you were a leader or officer in those organizations." The following types of college organizations were listed: departmental clubs, judging teams, honor fraternities/sororities, college 4-H/FFA and student agricultural council. Participation as well as leadership responses were scored 1 each for every type organization in which the student participated. These scores were summed across all activity types to provide a college agriculture participation index score.

Statistical Procedures

Crosstabular analysis will be used to examine the relationship between the dependent variables of educational and occupational choice in agriculture and each of the six independent variables. Chi square will be used to test the statistical significance of the relationships hypothesized between the various independent and the dependent choice variables. Statistical differences equal to or greater than the

.05 probability level will be required to indicate statistical support for the hypothesized relationships under test.

Discriminant analysis will be used to assess the combined ability of structural and socialization variables to differentiate the three groups of production agriculture, agribusiness and non-agriculture choices of a college major and an occupational goal. The discriminating variables used will represent both structural and socializing influences on the educational and occupational choices made by individuals.

Through discriminant analysis two objectives will be accomplished. The first is to statistically assess the ability of the independent variables to actually discriminate when combined into functions. The second is to determine the adequacy of the classification used for the discriminant functions. This is done by classifying the original set of students to determine how many are correctly assigned to the three choice types on the basis of the independent variables used. It is this objective that is most relevant to these data.

Discriminant analysis employs a stepwise procedure to distinguish variables called functions. These "discriminant functions" are of the form

$$di = di1Z1 + di2Z2 + \ldots + dipZp$$

where di is the score on the discriminant function, the d's are the weighting coefficients and the Z's are the discriminating variables (Cooley and Lohnes; 1972:245). The maximum

number of functions which may be derived is one less than the number of groups or equal to the number of discriminating variables. In this analysis each group (as measured by its centroid or mean) is treated as a point and each discriminant function represents a unique dimension describing the location of that particular group relative to the others.

An additional criteria for eliminating discriminant functions is to test for the statistical significance of discriminating information not already accounted for by earlier functions. As each function is derived, Wilk's Lambda, which is an inverse measure of the discriminating power in the original variables not yet removed by the discriminant functions, is computed. The larger the Lambda value, the less information remaining. Lambda is converted to a chi square statistic for the test of significance.

IV. FINDINGS

A number of hypotheses are generated for testing in this study. The first examines the relationship between choice of a college major in the School of Agriculture and choice of an occupation within the broad field of agriculture. Each of these variables were trichotonized into three types ranging from basic production agriculture through agribusiness to non-agriculture curricula and occupations. The first hypothesis examined was:

> I. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with the choice of an occupation in these same areas.

This hypothesis was accepted (Chi square = 13.89, 4 d.f., $p < .01$), Table 4. The relationship reveals that only 17 percent of agriculture students enrolled in production agriculture expect to enter occupations in the area of production agriculture, while an additional 30 percent expect to pursue occupations in agribusiness. The remaining students in production curricula expect to pursue careers in non-agricultural fields. On the other hand, 28 and 26 percent of the students enrolled in agribusiness and non-agriculture

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TABLE 4

OCCUPATIONAL CHOICES OF PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURAL MAJORS AT AUBURN UNIVERSITY

College Major	Occupational Choices: Production Agriculture No.	%	Agribusiness No.	%	Non-agriculture No.	%
Production Agriculture	12	16.9	21	29.6	38	53.5
Agribusiness	11	27.5	13	32.5	16	40.0
Non-agriculture	51	26.0	28	14.3	117	59.7
Total	74	24.1	62	20.2	171	55.7

Chi Square 13.892 4 d.f. sig. .007

missing observations - 53

curricula respectively expect to enter production agriculture occupations.

Viewing these data in terms of consistency between college major and expected occupation, the greatest congruence exists among students enrolled in non-agriculture curricula where 60 percent expect to enter non-agriculture occupations. Similarly, 33 percent of the students in agribusiness majors hold congruent occupational expectations, while the lowest congruency is observed among students enrolled in production agriculture curricula (17 percent). Additionally, a larger proportion of students enrolled in agribusiness curricula (60 percent) expect to enter an agricultural related occupation than students enrolled in either a production agriculture curricula (47 percent) or a non-agriculture curricula (40 percent).

The most impressive observation in these data is the general lack of congruency between college major and expected occupation. Even using broad definitions for each category, less than half (46.2 percent) of the respondents exhibited goal consistency.

Social Structure

Three hypotheses were generated for examining the relationship of structural factors to the choice of a college major in agriculture. Agricultural majors being compared were in production agriculture, agribusiness and non-agriculture curricula within the School of Agriculture.

Significant differences were predicted with respect to sex, residential background and the father's occupational status.

Sex

The second hypothesis examining the relationship of sex and the choice of a college major was stated as follows:

> II. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with the sex of the individual.

This relationship for males and females was not found significant (Chi square = .104, 2 d.f., $p < .05$), Table 5. However, one important finding was that the proportion of males and females choosing majors in both production agriculture and agribusiness is approximately the same. Also, females are equally attracted to majors in production agriculture fields and agribusiness fields. Due to the stratification procedure used in selecting the sample, no comparison can be made either to non-agriculture students or to the total enrollment of the School of Agriculture. The sample included only a 30 percent sampling of both males and females enrolled in non-agriculture curricula but a complete enumeration of all females in production agriculture and agribusiness curricula.

Residence

The hypothesis to test the relationship of residence and the choice of a college major was stated as follows:

TABLE 5

SEX, RESIDENTIAL BACKGROUND AND FATHER'S OCCUPATIONAL STATUS OF PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURE MAJORS AT AUBURN UNIVERSITY

College Major	Sex		Residential Background			Father's Occupational Status		
	Male %	Female %	Urban %	Rural non-farm %	Farm %	High %	Intermediate %	Low %
Production Agriculture	74.7	25.3	43.0	25.3	31.6	34.7	16.0	49.3
Agribusiness	76.6	23.4	46.8	27.7	25.5	40.0	22.2	37.8
Non-Agriculture	74.3	25.7	68.7	24.3	7.0	50.0	19.8	30.2
Total	74.7	25.3	60.1	25.0	14.9	45.2	19.3	35.5
	Chi Square = .1044 2 d.f. p .05 missing observations = 4 N = 356		Chi Square = 36.405 4 d.f. p .05 missing observations = 4 N = 356			Chi Square = 9.63 4 d.f. p .05 missing observations = 28 N = 332		

III. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with one's residential background.

This hypothesis was accepted (Chi square = 9.63, 4 d.f., $p < .05$), Table 5. The proportion of students in each type curricula coming from farm residences ranged from 32 percent in production agriculture to only 7 percent in non-agriculture curricula. Sixty-nine percent of the non-agriculture students were from urban areas. The proportion of students in each type of curricula who came from rural non-farm residences was relatively constant at 24 to 28 percent.

Father's Occupational Status

The third structural factor considered is the father's occupational status. The hypothesis testing the relationship between father's occupational status and the choice of a college major was stated as follows:

IV. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with the father's occupational status.

This hypothesis was accepted (Chi square = 9.63, 4 d.f., $p < .05$), Table 5. Half of the production agriculture students reported father's occupations that fell in the low status category while the majority of the students in non-agriculture curricula reported father's whose status was in the high category. Differences in the father's occupational

status of agribusiness students were more moderate and intermediate compared to the status differences of the other two curricula types. The proportion of agribusiness students whose fathers had high occupational status was 40 percent compared to 38 percent with low status.

Socialization

To measure the effect of socialization factors on the educational choice of agriculture students, three types of experiences were used. These included agriculture related activities during high school, agriculture work experiences and agriculture organizational activities in college. Three participation indices were created from several independent items related to each type of experience to determine the extent of participation in the various socializing activities.

High School Experience

The hypothesis examined with with regards to high school experience was as follows:

> V. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with agriculture related high school experiences.

This hypothesis was accepted (Chi square = 33.18, 4 d.f., $p < .0001$), Table 6. Over half (53.1 percent) of the production agriculture majors had participated in one or more agriculture related activity in high school. Slightly fewer

agribusiness majors (44.7 percent) and only 33 percent of the non-agriculture majors had participated in agriculture related activities during their high school years. A more distinct difference was found among those participating in two or more activities. More than one fourth (27.8 percent) of the production agriculture students had participated in two or more agriculture related activities with decreasing participation found for the agribusiness (14.9 percent) and (7.8 percent) majors.

Work Experience

The hypothesis to test the relationship of work experience to the choice of a college major was as follows:

> VI. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with agriculture related work experiences.

This hypothesis was accepted (Chi square = 24.629, 4 d.f., $p < .001$) , Table 6. Only about one fourth of the students choosing production agriculture and agribusiness majors lacked any agricultural work experiences, while similar proportions of students in these curricula reported three or more such agriculture related work experiences. Only 8 percent of the non-agriculture majors reported having three or more agriculture related work experiences and almost half (45 percent) had no such previous work experiences.

TABLE 6

HIGH SCHOOL, COLLEGE AND WORK EXPERIENCES OF PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURE MAJORS AT AUBURN UNIVERSITY

College Major	High School Experiences			Work Experiences			College Experiences		
	None %	One %	Two or More %	None %	One %	Two or More %	None %	One %	Two or More %
Production Agriculture	46.8	25.3	27.8	21.5	54.4	24.1	44.3	35.4	20.3
Agribusiness	55.3	29.8	14.9	27.7	53.2	19.1	42.6	34.0	23.4
Non-Agriculture	77.0	15.2	7.8	45.2	47.0	7.8	66.1	23.5	10.4
Total	67.4	19.4	13.2	37.6	49.4	12.9	58.1	27.5	14.3
	N = 356 Chi Square = 33.180 4 d.f. p .000 Missing Observations = 4			N = 356 Chi Square = 24.629 4 d.f p .0001 Missing observations = 4			N = 356 Chi Square = 18.027 4 d.f. p .001 Missing observations = 4		

College Experience

The hypothesis testing the relationship between choice of a college major and college experience in agriculture related activities was as follows:

> VII. The choice of a college major in production agriculture, agribusiness and non-agriculture is associated with agriculture related college experiences.

This hypothesis was accepted (Chi square = 18.027, 4 d.f., $p < .001$), students pursuing majors in production agriculture (44 percent) reported having no college experiences in agriculture related activities while a much larger proportion (66 percent) of the non-agriculture students reported having no such activities. The production agriculture and agribusiness majors presented a highly similar pattern as to the number of agriculture related activities in which they had participated with over one third having participated in at least one such activity and slightly more than 20 percent reporting participation in two or more activities. Only 10 percent of the non-agriculture majors had any extensive college agriculture related experiences.

Occupational Choice

Social Structure

To examine the relationship of structural factors to the choice of an occupation, three hypotheses were generated. Each hypothesis predicted significant differences between the choice of an occupation in production agriculture,

agribusiness or non-agricultural fields and the independent factors of sex, residential background and father's occupational status.

Sex

The hypothesis examining the relationship between sex and the choice of an occupation was stated as follows:

> VIII. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with the sex of the individual.

This hypothesis was rejected (Chi square = 4.388, 4 d.f., p >.05), Table 7. It was found that a smaller proportion of females expect to pursue careers in traditional agriculture and agribusiness than chose a college major in these areas. Conversly, more females expect to enter occupations in non-agricultural fields. The proportion of males and females in both production agriculture and agribusiness occupations was virtually the same. A larger percentage of the students choosing non-agriculture occupations was represented by females. This difference would have been even more pronounced if adjustments for over sampling of females in production agriculture and agribusiness were made.

Residential Background

To examine the relationship of residential background and occupational choice the following hypothesis was generated for testing:

TABLE 7

SEX, RESIDENTIAL BACKGROUND AND FATHER'S SOCIOECONOMIC STATUS OF AGRICULTURE STUDENTS AT AUBURN UNIVERSITY CHOOSING OCCUPATIONS IN PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURE FIELDS

Occupational Choice	Sex		Residential Background			Father's Socioeconomic Status		
	Male %	Female %	Urban %	Rural non-farm %	Farm %	High %	Intermediate %	Low %
Production Agriculture	83.8	16.2	58.1	28.4	13.5	30.6	3.2	66.1
Agribusiness	82.5	17.5	61.9	15.9	22.2	43.5	33.9	22.6
Non-Agriculture	73.3	26.7	54.7	29.7	15.7	47.9	19.0	33.1
Total	77.7	22.3	57.0	26.5	16.5	43.2	18.8	38.0
	Chi Square = 4.388 2 d.f. p .05 missing observations = 51 N= 309		Chi Square = 5.588 4 d.f. p .05 missing observations = 51 N = 309			Chi Square = 36.378 4 d.f. p .05 missing observations = 73 N = 287		

IX. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with one's residential background.

This hypothesis was also rejected (Chi square = 5.588, 4 d.f., p <.05) Table 7. Differences in the proportions of students from each residential type that chose production agriculture, agribusiness or non-agriculture occupations were minimal. Over half of the students choosing each type of occupation were from urban residences with the largest percentage (61.9 percent) occurring for those choosing careers in agribusiness. Students oriented toward agribusiness occupations were least likely to come from rural non-farm backgrounds. The proportions of students choosing production agriculture and non-agriculture careers from all three residential backgrounds were very comparable.

Father's Occupational Status

The hypothesis testing the relationship between father's socioeconomic status and occupational choice was as follows:

I. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with the father's occupational status.

This hypothesis was accepted (Chi square = 36.378, 4 d.f., p <.05) , Table 7. Of those students choosing production agriculture careers two thirds of their father's had low status occupations while nearly half (47.9 percent) of those choosing non-agriculture careers had father's with high

status occupations. Students choosing agribusiness careers were more similar to those choosing non-agriculture occupations than to those choosing production agriculture in terms of differences in father's occupational status.

Socialization

The effect of socialization on the occupational coices of students in agriculture was determined in terms of three types of socializing experiences. Included were agriculture related activities during high school, agriculture work experiences and college organizational activities.

High School Experience

The hypothesis testing the the relationship of high school experience tothe choice of an occupation was stated as follows:

> XI. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with agriculture related high school experiences.

This hypothesis was rejected (Chi square = 7.546, 4 d.f., p >.05) , Table 8. Approximately two thirds of those choosing careers in either of the three occupational areas had participated in no agriculture related activities during their high school years. The pattern of high school agriculture participation followed a highly similar pattern for both production agriculture and non-agriculture career types. Only the agribusiness career type showed variation. For

TABLE 8

HIGH SCHOOL, COLLEGE AND WORK EXPERIENCES OF AGRICULTURE STUDENTS CHOOSING OCCUPATIONS IN PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURAL FIELDS

Occupational Choice	High School Experiences			Work Experiences			College Experiences		
	None %	One %	Two or More %	None %	One %	Two or More %	None %	One %	Two or More %
Production Agriculture	64.9	21.6	13.5	39.2	47.3	13.5	56.8	29.7	13.5
Agribusiness	60.3	14.3	25.4	34.9	47.6	17.5	52.4	31.7	15.9
Non-Agriculture	68.6	19.8	11.6	34.9	51.2	14.0	58.1	26.2	15.7
Total	66.0	19.1	14.9	35.9	49.5	14.6	56.6	28.2	15.2
	Chi Square = 7.546 4 d.f. p .05 missing observations = 51 N = 309			Chi square = .965 4 d.f. p .05 missing observations = 51 N = 309			Chi square = 1.051 4 d.f. p .05 missing observation = 51 N =309		

these students, one fourth had participated in two or more agriculture related activities during high school. This represented a considerably larger proportion with a higher involvement rate than occurred among students choosing either a production agriculture or non-agriculture career.

Work Experience

The hypothesis testing the relationship between agriculture related work experiences and occupational choice was stated as follows:

> XII. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with agriculture related work experiences.

This hypothesis was rejected (Chi square = .965, 4 d.f., p >.05), .05 level, Table 8. The number of agriculture related work experiences varied little among students making the three types of career choices. Slightly over one third of those choosing careers in the three areas reported no agriculture related work experiences. Approximately half the students in each category had at least one or two agriculture related work experiences but only a small percentage (approximately 15 percent) had three or more agriculture related work experiences. Moreover, contrary to the hypothesized direction, students desiring production agriculture careers did not indicate the most and those expecting non-agriculture careers the least experiences. In fact, just the opposite was found.

College Experience

The next hypothesis tested examined the relationship of agriculture related college experience and occupational choice.

XIII. The choice of an occupation in production agriculture, agribusiness and non-agriculture is associated with agriculture related college experiences.

This hypothesis was rejected (Chi square = 1.051, 4 d.f., p >.05), Table 8. Participation in agriculture related college activities was not associated with choice of an expected occupation. Fewer than half of the students choosing careers in any of the three areas reported participating in agriculture related activities during college. Only about 15 percent reported having participated in three or more such activities during their college years.

Discriminant Analysis

Discriminant analysis was employed to determine which of the six variables previously discussed discriminated most between production agriculture, agribusiness and non-agriculture non-agriculture majors and similarly for the three types of expected occupations. A stepwise procedure was implemented to select which variables best minimize Wilk's Lambda. The F value was used to determine which variables contributed significantly to the discriminant function.

Educational Choice

The first hypothesis tested was stated as follows:

> XIV. Sex, residential background, father's socioeconomic status, high school, work and college experiences discriminate in the choice of a college major.

This hypothesis was accepted (chi square = 39.106, 8 d.f., p <.0001), Table 9. For those choosing majors in the areas of production agriculture, agribusiness and non-agriculture four variables high school experiences, residential background, college experiences and work experiences were found to discriminate in the choice of a college major. Father's occupational status and sex were not included in the explanatory function. experience was not found significant, this variable was retained in the discriminant function.

Although all four variables were retained in the discriminant function, the amount of variation explained was low. The sum of the eigenvalues indicated that slightly over 18 percent of the total variance can be explained. Even though the amount of variance explained is small, it is statistically significant (beyond the .001 level) as determined by converting Wilk's Lambda to Chi square.

The fact that only one discriminating function appeared suggests that there are only two distinct groups. This is

TABLE 9

SUMMARY OF DISCRIMINANT ANALYSIS OF CHOICE OF COLLEGE MAJOR OF AGRICULTURE STUDENTS

Variable	Step	F to Enter or Remove	Wilk's Lambda	Standardized discriminant coefficients	Sig. of change
High School experiences	1	16.7325	.90767	-0.4013	.000
Residential background	2	6.2126	.87454	-0.4033	.001
College experiences	3	5.0596	.84829	-0.3014	.004
Work experiences	4	2.2294	.83685	-0.36938	.072

Eigenvalue	Canonical Correlation	Wilk's Lambda	Chi Square
.18436	.395	.8368	58.332
Degrees of Freedom 8		p .000	

clearly illustrated in Figure 1 where it can be seen that the centroids of production agriculture and agribusiness majors are relatively close together in contrast to non-agriculture majors. However, the prediction results show that over two thirds of the cases were correctly classified using the four variables in this function.

Further analysis was made using only two groups: agriculture and non-agriculture. The agriculture group was composed of production agriculture and agribusiness majors. The percent of cases correctly classified increased from 66.5 percent to 78.3 percent.

Occupational Choice

The second hypothesis was stated as follows:

XV. Sex, residential background, father's socioeconomic status, high school, work and college experiences discriminante in the choice of a occupation.

This hypothesis was accepted (chi square = 58.332, 8 d.f., $p < .001$) In the choice of an occupation in production agriculture, agribusiness and non-agriculture fields, four variables were retained in the discriminant function. This decision was based on the resulting F score to enter or remove a variable. The four variables found to discriminate were father's occupational status, high school experiences,

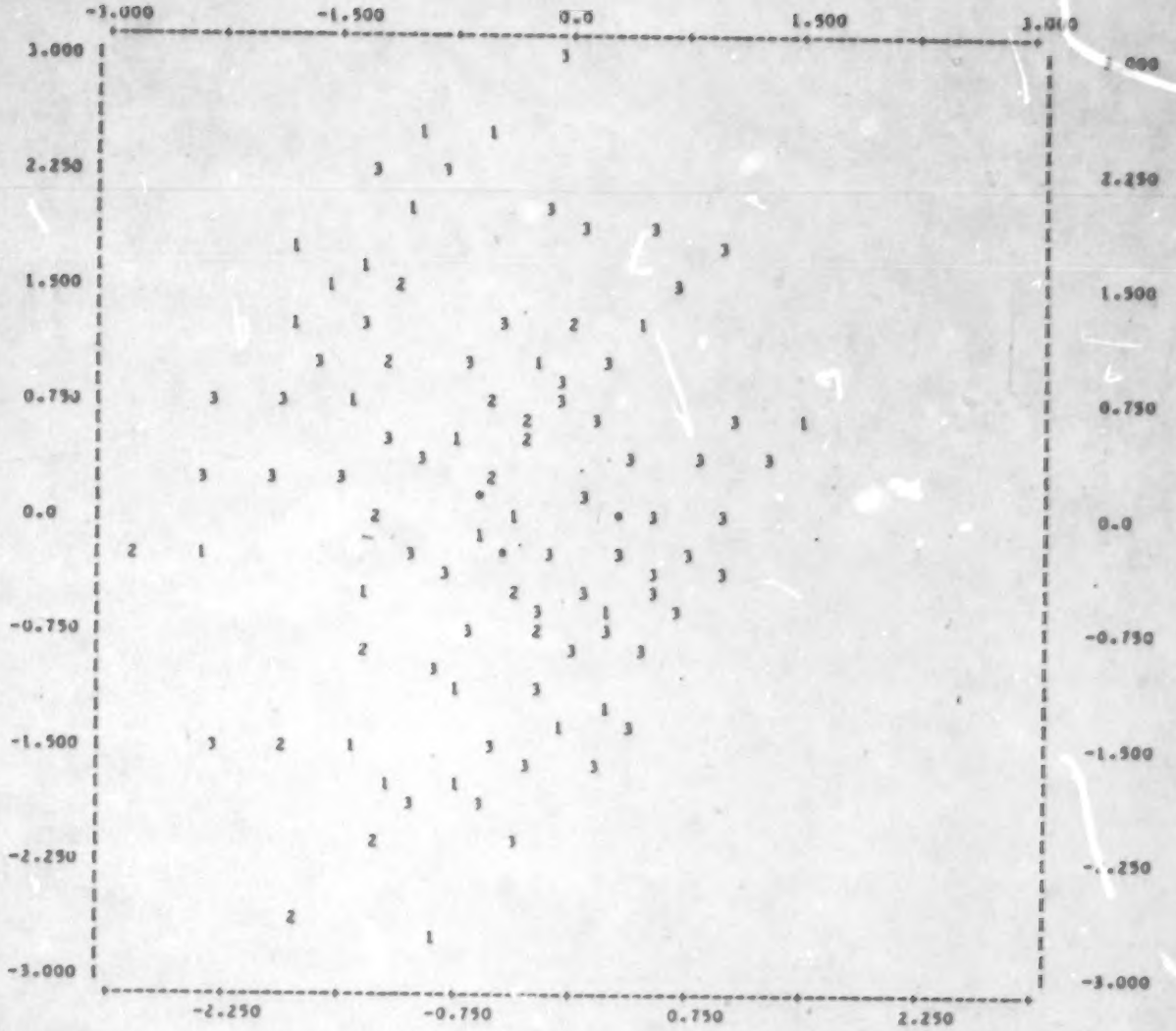

Figure 1. Group centroids, as designated by ★, for (1) production agriculture, (2) agribusiness and (3) non-agriculture educational choices showing their locations as defined by the discriminant functions.

TABLE 10

SUMMARY OF DISCRIMINANT ANALYSIS OF CHOICE OF OCCUPATION OF AGRICULTURE STUDENTS

Variable	Step	F to Enter or Remove	Wilk's Lambda	Standardized discriminant coefficients	Sig. of change
Father's occupational status	1	13.88503	0.91093	1.05904	.000
High School experience	2	2.69699	0.89389	.01802	.064
Residential Background	3	2.56456	0.87792	.39144	.064
Sex	4	1.16192	0.87072	.04191	.301

Eigenvalue	Canonical Correlation	Wilk's Lambda	Chi Square
.11532	.322	.8707	39.106

Degrees of Freedom 8 p .000

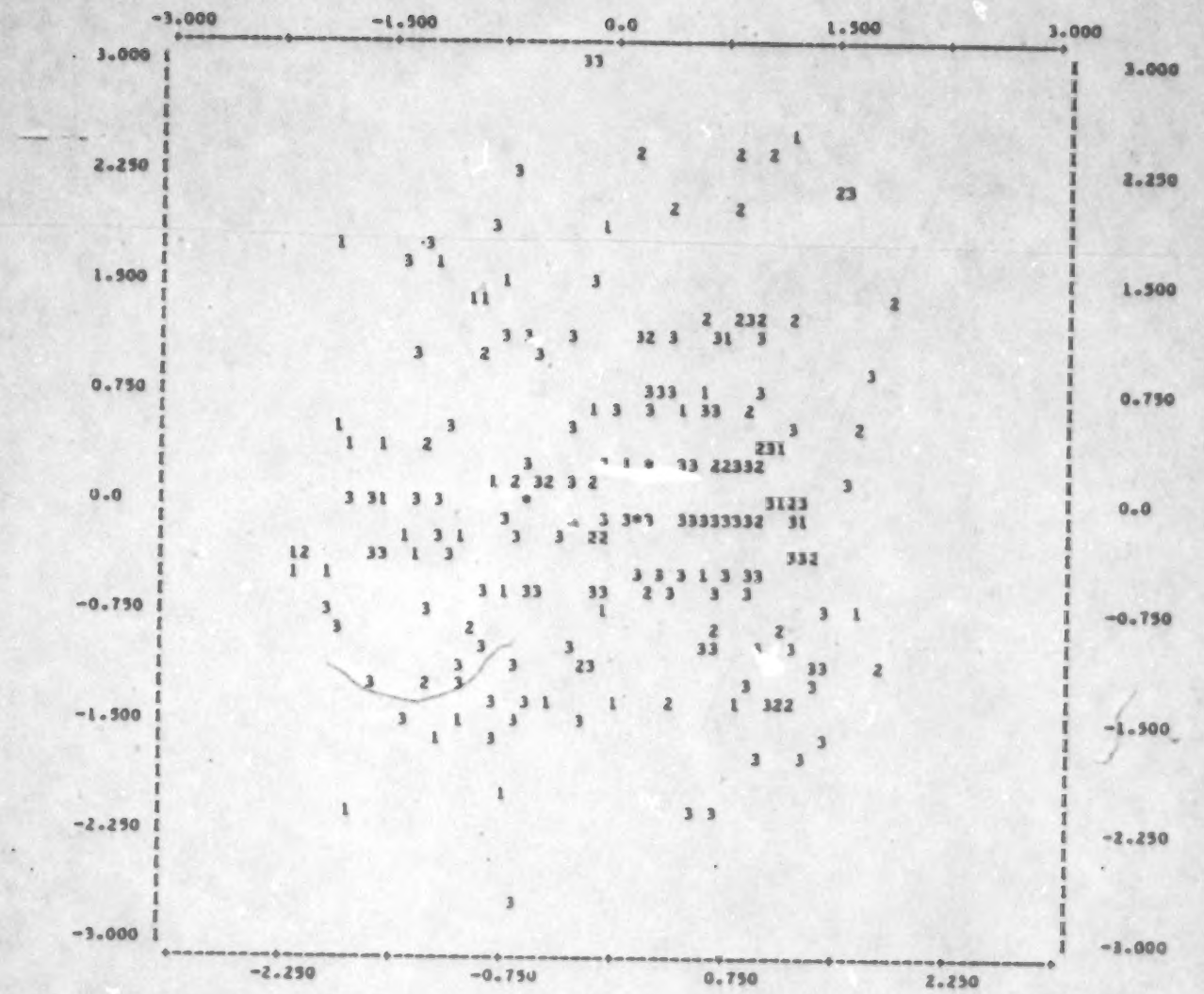

Figure 2. Group centroids, as designated by *, for (1) production agriculture, (2) agribusiness and (3) non-agriculture educational choices showing their locations as defined by the discriminant functions.

residential background and sex. However, of these variables only the father's occupational status was statistically significant. Through the stepwise procedure significance of change did not reach the .05 level when residential background, high school experiences and sex were introduced.

Although statistically significant, this discriminant function explains just slightly more than 11 percent of the total variance in the choice of an occupation in the field of agriculture. The canonical correlation of .322 when squared also indicates the poor ability of this factor to explain the choice of agriculture occupations by students majoring in different agriculture curricula, Table 10.

Only one discriminant function was found statistically significant suggesting that there are only two distinct groups. The two groups of occupations found most closely related (Figure 2) by plotting the group centroids are those of agribusiness and non-agriculture.

The prediction results show that only slightly over half (59.5 percent) of the cases in production agriculture, agribusiness and non-agriculture were correctly classified. As suggested by the fact that there was only one discriminant function and by the closeness of the group centroids of agribusiness and non-agriculture choices, these two groups were combined and compared with the production agriculture group. By doing this it was possible to correctly classify 78.75 percent of the cases.

V. SUMMARY AND CONCLUSIONS

Summary

Support exists in previous research for the contention that there are both structural and socializing influences that come to bear on the decisions made by individuals concerning the choice of a college major and the eventual occupations they expect to enter. Selected key factors of a structural nature identified from the literature were sex, residential background and father's occupational status. Socializing experiences beleived to have a significant influence in the choice of and commitment to a major and eventual career in agriculture were high school, college and work experiences.

Before these relationships were examined a typology was developed for classifying the educational and occupational choices of the agriculture students. These choices were classified as production agriculture, agribusiness and non-agriculture.

Hypotheses testing the relationship between the choice of college major in production agriculture, agribusiness and non-agriculture and the structural variables of residential background, father's socioeconomic status were accepted on

the basis of chi values and were significant beyond the .05 level. However, the hypothesis examining the relationship between sex and the choice of a college major was not statistically significant and was rejected.

The hypotheses generated to test the relationship of the choice of a college major and the socializing influences of high school, work and college experiences were accepted. Each of these experiences were found statistically signifcant in the choice of college major.

The same set of structural and socializing variables were also examined in hypotheses testing the relationship of each to the choice of a career in production agriculture, agribusiness and non-agriculture. Only the hypotheses testing the relationship of sex and father's socioeconomic status were found statistically significant. Those testing the relationship of career choice and residential background as well as the socializing experiences of high school, work and college experiences were not statistically significant at the .05 level.

Both hypotheses testing the combined ability of the structural and socializing variables to discriminate in the choice of a college major and the choice of an occupation were accepted. However, the findings suggest that each hypothesis should be restated on the basis of the variables retained in the discriminant function. The hypothesis testing the ability of these variables to discriminate in the

choice of a college major should be stated as follows:

> Residential background, high school, work and college experiences discriminate in the choice of a college major.

Although not supported by the results of the chi square tests, four variables were retained in the second discriminant function. Only two of these were statistically significant. Therefore, the second hypothesis testing the ability of these same variables to discriminate in the choice of an occupation in agriculture should be restated in the following manner:

> Sex, residential background, father's socioeconomic status, and high school experiences discriminate in the choice of an occupation.

The findings of discriminant analysis suggest that there are only two distinct groups of students represented in these three types of college majors and occupations in agriculture. The unanticipated finding here is that there exists a distinct difference in the groups most closely related. In the choice of a college major the difference in groups was found between production agriculture and agribusiness students and non-agriculture students. By comparison, the difference for the choice of an occupation was found between production agriculture students and non-agriculture and agribusiness students.

Conclusions

Several conclusions may be drawn from these data. The foremost is that the decision to pursue a college major in agriculture is influenced by the same factors that have been found to influence the choices of college curriculum in previous studies, using other samples (Sewell, Haller and Straus; 1957:71). Both structural and socializing factors play a role in this decision.

Although the variables considered here are critical to the student's choice of an agriculture major they are not as influential in the choice of an occupation. These variables primarily serve as indicators of educational choice and are not as useful as indicators or predictors of occupational choice at this point in the career process. Therefore the conclusion is drawn that even though occupational and educational choices are theoretically made simultaneously, the same set of variables do not influence each choice at the same time and in the same way. Support for this conclusion is drawn from the educational and occupational attainment literature (Sewell, Haller and Portes; 1968:89). When a similar set of variables was used, 34 percent of the variance in educational attainment was accounted for but only 27 percent of the variance in occupational attainment. Although these findings are in the area of attainment rather than choice, there exists a great deal of similarity.

Secondly, it was the purpose of this research to evaluate how well the indicators reflect the occupational and educational choice process among agriculture students. Although the variables were statistically significant, only a small proportion of the total variance was explained for educational choice and even less for occupational choice.

A possible alternative explanation is that there are other factors more significant in explaining educational and occupational choices made by students in agriculture. Several studies suggest that attitudes (Musgrave; 1967:351) and values (Blaikie;1971:313) held toward a particular goal are a primary source of influence in one's decision to puruse a particular career path. Further research is needed to consider this dimension.

Another explanation for the small amount of variance explained is the homogeneity of the sample. This is supported by Powell (1973:284) who found that students are attracted to curricula where other students have social characteristics similar to their own. Thus, use of a larger sample including students from a variety of non-agriculture curricula located in other schools within the Univeristy could provide additional support for the hypotheses set forth in this study. However, Because of the homogeneity of the sample even a small proportion of explained variance is important.

Overall, it is felt that the major contribution of this study has been to focus attention on a particular group of

students. The findings may be viewed in two ways. The first is that agriculture students do not differ from students in other curricula in the factors that influence their educational and occupational choices. An alternative is that there are other factors unique to students in agriculture that better explain the choice made concerning a college major and the occupation they expect to pursue.

Implications

The major theoretical implication that may be drawn from this study is that emphasis needs to be placed on the variety of influences that come to bear when making educational and occupational decisions. The effect of neither structural nor socializing influences either individually or together is sufficient to adequately explain these choices.

Attention needs to be given to the development of a theory of occupational choice which would encompass the variety of perspectives currently found in the literature. Empirically, this study leads one to believe that there are factors other than those examined here that better explain the educational and occupational choices made by agriculture students.

Additionally, attention needs to be given to defining a more concise measure of occupational choice. The theoretical perspectives stress the fact that occupational choice is a process and yet researchers continue to equate aspirations

and expectations with choice (Kuvlesky and Bealer; 1966:265).

On a more practical level, attention needs to be directed to those students enrolled in the various curricula within the School of Agriculture whose interests are not related to the field of agriculture and who do not expect to pursue an agriculture related occupation. Counseling received from college administrators and from guidance personnel should take this factor into consideration. Also, when counseling students, counselors should bear in mind that there are many students pursuing agriculture majors who are not from farm backgrounds nor have they had agriculture related experiences.

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